

Contents

<i>Foreword by David Pimm</i>	ix
<i>Acknowledgments</i>	xi
1. Introduction	1
Narrative 1: The “Analog & Analytic” Experience—An Illustration of the Proposed Integration of Reading in Mathematics Instruction	3
Multiple Perspectives on Reading in Inquiry-Oriented Mathematics Instruction	7
Scope, Content, and Organization of the Book	12
2. Frameworks for Rethinking Reading in Mathematics Instruction	14
Building a Framework for Inquiry-Oriented Instruction	14
Reconceived Goals for School Mathematics	22
Rethinking Reading Theory and Practice	26
Toward New Ways of Thinking About the Integration of Reading in Mathematics Instruction	33
3. Research and Instructional Settings	37
An Overview of the “Reading to Learn Mathematics” (RLM) Project	37
Follow-Up Studies and Decisions That Shaped This Book	43
A First-Year Teacher in a Rural/Suburban Middle School	44
A Veteran Teacher in an Alternative Urban High School	53
4. The Potential of Reading Rich Mathematical Texts Generatively: A Transactional Perspective	63
Narrative 2: “Math & War” Vignette—Exploring the Connections Between Mathematics and War Through Reading, Talking, and Drawing	65

Narrative 3: “Egg Man” Vignette—Investigating Technical Concepts and “Big Ideas” About Geometry Through Multiple Readings of an Essay	86
Understanding and Tapping the Potential of Transactional Reading Strategies in Mathematics Classrooms	101
Summary and Conclusions	108
5. Reading Practices in an Inquiry-Oriented Mathematics Classroom: A Social Practice Perspective	111
Narrative 4: The “Racing” Project—Reading Practices at Work in an Inquiry-Oriented Mathematics Class	113
Discussion	129
Summary and Conclusions	142
6. The Role of Reading in Mathematics Inquiry Cycles: A Functional Perspective	144
Narrative 5: The “Taxigeometry” Inquiry Cycle—Examining the Notions of “Definition,” “Proof,” and “Mathematical Truth” Through a Study of a Non-Euclidean Mathematical System	146
Narrative 6: The “Census” Inquiry Cycle—Learning Statistical Concepts and Techniques in the Context of Real-Life Mathematics	161
Functions of Reading Across and Throughout Inquiry Cycles	166
Summary and Conclusions	179
7. Conclusion	182
An Expanded View of Integrating Reading in Inquiry-Oriented Mathematics Classrooms	182
Implications for Mathematics Education	187
Directions for Future Research	190
Concluding Thoughts	193
<i>Appendix: Research Questions and Data Analysis Procedures</i>	195
<i>References</i>	213
<i>Index</i>	222
<i>About the Authors</i>	228